

AMENDMENTS TO THE SPECIFICATION

IN THE SPECIFICATION:

Please replace the paragraph on page 1, lines 10 to 16, with the following:

Various types of fenders have been known to the art which function as ~~the~~ a shock absorber in the operation of docking ~~the~~ a ship at the harbor or when the docked ship is moored to the pier. Above all, a solid-type fender with a heavy wall thickness formed of an elastic material, such as rubber, is widely used because of its simple construction having a shock absorbing function and ~~resisting~~ a resistance to destruction.

Please replace the paragraph on page 2, lines 10 to 24 with the following:

The solid-type fender is required to have such hardness, reaction force and other physical properties including tensile strength, breaking elongation and the like as to ensure the protection of the ship from destruction when ~~collided with the~~ it collides with, e.g., another ship. It has been a conventional practice to evaluate the performance of the fender based on a characteristic curve such as of a the relationship between the amount of compression and the reactive force, the

characteristic curve determined by compressing the fender at a given compression rate ~~under~~ at room temperatures (ordinary temperature conditions). No consideration has been given to the variations of the reaction force associated with the variations of the environment, particularly the temperature, where the fender is actually used.

Please replace the paragraph beginning at page 2, line 25 and continuing to page 3, line 7 with the following:

In reality, however, the fender is used under ~~the~~ temperatures varying from -30 to 60°C depending upon geographical areas and the seasons. Accordingly, if the performance of the fender is evaluated based only on the characteristics determined under ~~the~~ ordinary room temperature conditions ~~on~~ in the order of 23°C, the fender used under relatively low or high temperature conditions will encounter a problem.

Please replace the paragraph at page 3, lines 8 to 12 with the following:

The present inventors have investigated to find that when used under relatively low temperature conditions ranging from -30 to 23°C, the fender may sometimes exhibit a reaction force at

-30°C which is more than 1.5 times the reaction force measured ~~under the~~ at room temperatures.

Please replace the paragraph at page 3, lines 13 to 21 with the following:

This point will be explained by way of a specific example shown in Fig.11. Fig.11 shows the fender 9, 1000mm in height and 1000mm in length, has an impact receiving plate 4, 2000mm in width and 2000mm in length, mounted thereto by means of a frame fixing bolt 5. This fender 9 is secured ~~to~~ in place with an anchor bolt 6. The fender exhibits the following reaction force R and surface pressure P against the ship body under room temperatures:

Reaction force R = 62.5 tonf

Please replace the paragraph at page 4, lines 5 to 9 with the following:

That is, if the value of a maximum reaction force at -30°C over a maximum reaction force at 23°C is more than 1.3 times, the value exceeds the allowable surface pressure of the ship, leading to a the possibility of destroying the ship.

Please replace the paragraph at page 4, lines 10 to 18 with the following:

On the other hand, when used under relatively high temperature conditions ranging from 23 to 60°C, a fender formed from some rubber material may exhibit a reaction force at 60°C which is about 85% less than that measured at room temperatures. The decreased reaction force means a ~~decreased~~ decrease in the energy absorbed by the fender so that the fender is incapable of effectively absorbing the kinetic energy of the docking ship. This can constitute a causative factor ~~of~~ in an accident.

Please replace the paragraph at page 4, line 25 to page 5, line 8 with the following:

Here, the general design applies this fender to a ship with a docking energy of 25 ton• m. ~~Assumed~~ Assuming that the reaction force  $R_{60}$  at 60°C is lowered to 85% of the reaction force  $R_{23}$  measured at the room temperature, the amount of energy absorption is correspondingly decreased. Thus, the reaction force and the amount of energy absorption are calculated as follows:

$$R_{60} = 62.5 \times 0.85 = 50 \text{ tonf}$$

$$E_{60} = 26.3 \times 0.85 = 22.3 \text{ ton} \cdot \text{m} < 25 \text{ tonf} \cdot \text{m}$$

Please replace the paragraph at page 5, lines 15 to 22 with the following:

As mentioned supra, the conventional fender is far from giving adequate consideration to the matter that the fender should function according to the variations of ~~the~~ environmental temperature. In view of this, it is an object of the invention to provide a fender reliably functioning under low temperature conditions and/or high temperature conditions as well as a production method for such a fender.

Please replace the paragraph at page 5, line 23 to page 6, line 8 with the following:

For achieving the above object, the present inventors have conducted various examinations of the rubber composition constituting the fender, trying to find how the materials of the rubber composition must be characterized in order to attain ~~the~~ a fender adapted for ~~the~~ temperature variations. The inventors have found that it is effective to identify the ranges of temperature-dependent properties and an ordinary-temperature  $\tan\delta$  range as determined by a dynamic stress test. The findings were further reviewed to thereby ~~to~~ accomplish the present invention.

Please replace the paragraph at page 9, lines 9 to 22 with the following:

In the fender of the present invention wherein the rubber composition has the rate of change of compressibility  $R_{-30}/R_{23} \leq 1.3$  (where  $R_{-30}$  denotes the maximum reaction force at  $-30^{\circ}\text{C}$  as determined by compressive test and  $R_{23}$  denotes the maximum reaction force at  $23^{\circ}\text{C}$  as determined by compressive test), the increase of the reaction force upon compression is suppressed in cold areas with temperatures of  $-30^{\circ}\text{C}$  and the like. Hence, the fender is able to exhibit the shock absorbing function as designed. Accordingly, when ~~collided~~ colliding with a the ship under low-temperature conditions, the inventive fender will not suffer the loss of shock absorptivity, which is experienced in the conventional fender, thus protecting the ship from destruction.

Please replace the paragraph at page 10, lines 18 to 22 with the following:

According to the invention, it is also possible to provide a fender having an effective compressive energy absorptivity over a wide temperature range ~~ef~~ from a low-temperature environment to a high-temperature environment.